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CRAFTING A CRITICAL TECHNICAL PRACTICE

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Abstract

In recent years, the category of "practice-based research" has become an essential component of discourse around public funding and evaluation of the arts in British higher education. When included under the umbrella of public policy concerned with "the creative industries", technology researchers often find themselves collaborating with artists who consider their own participation to be a form of practice-based research. We are conducting a study under the "Creator" Digital Economies project asking whether technologists, themselves, should be considered as engaging in "practice-based" research, whether this occurs in collaborative situations, or even as a component of their own personal research [1].

Keywords: Critical Analysis, Practice-Based Research, Collaboration, Computer Science

Creative Technologists

The recent upswell of interest in "creative technologies" has moved many technologists into realms more traditionally populated by artists working with technology. This has led to an explosion of novel uses of technology. However, many people trained in the fields of Art and Design claim the work created by these creative technologists lacks depth or critical enquiry. It is more a celebration of novelty, gizmos and gadgetry than any meaningful exploration of technology or creativity. They feel true enquiry has been hijacked by the "demo-or-die" culture of the MIT Media Lab [2].

Many in the creative technology community feel the initial creative spark is the most important aspect of any work and they jump from spark-to-spark before giving any idea enough time to fan into a flame. In the meantime, designers and artists continually struggle to give more depth to their work, to find appropriate contexts, to make something bold which is more than purely decorative or does more than show off their virtuosic technical skill. Within Design and Art, this approach to making work has become known as "critical practice", and is intimately connected to notions of practice as a form of research. Both these notions of critical practice and the relation between practice and research are highly debated within Design and the Arts, but there are few parallels amongst technologists. Instead, technologists debate whether their form of making is purely technical or whether it can be viewed as a form of craft.

These perspectives can be usefully contrasted with Phil Agre's 1997 critique of fundamental ideas and methods of artificial intelligence research [3], which brought currency to the phrase "Critical Technical Practice" within Computer Science. Agre's work offers craft and practice as methodological perspectives from which to address concerns with technology and criticality. However our own investigation highlights practice – asking how a fundamental concern with practice might form bridges between technique and criticism.

Our own project consists of a series of interviews exploring these debates and the relationship between practice, criticality, and craft. This Transactions paper presents a short overview including comments from the interviews conducted to date.

Critical Practice

Notions of criticality vary widely between disciplines and communities. Designers, when asked about criticality, are likely to launch into discussion of contemporary French Philosophy whereas engineers will normally jump to timing, fault-tolerance, and life-support.

Joseph Hyde provided an interesting view of criticality as a feedback loop, whereby he continually questions why he does things. He said he doesn't necessarily reach any answers, but it doesn't stop him from asking the questions. Rosy Greenlees, Executive Director of the UK Crafts Council, offers a more formal description of a critical practice as one where the maker questions what s/he is making, its aesthetic value, how it fits in the world, how it develops, how one writes about it, debates it, and engages with the rest of one's community. Greenlees stated that much of the Craft Council's work focuses on teaching makers to critically analyse their work and articulate their process.

Nick Tandavanitj of Blast Theory offered a more social view of criticality by stating how important it is to have a coherent sense of positioning himself in relation to trends outside his control – to not just accept or roll with them, but to actually take a position. "The thing that stops me from becoming someone who just plays with new technologies or creates novelties is that those little loops of curiosity are always in the context of a larger goal, the goal of making an experience or a piece of work. I'd characterize it as bringing all our experiences to bear… on what we want to make, as opposed to me being just someone who has a curiosity about computers and it's always informed by working with others…"

Downie, Mansoux, Biggs, and nearly all we interviewed agree. As Hyde said, "I don't think you can do anything in isolation. I'd find it very hard if I couldn't find any relationship between my practice and that of others. I suppose that's the way I critique what I do". They all think of their work in the context of others', in the context of a community. Or, as Tandavanitj so eloquently stated, "I suppose it's like writing… only when it's uttered to someone does it become meaningful. The utterance, the speaking or doing it in public makes it meaningful… it's actually about us as a group of people…"

Communities of Practice

Dominic Smith who works in open source developer communities, emphasizes the crafting of social behaviours over technical virtuosity and, "making sure that what we do has a lasting impact both for ourselves and for the community we work within". He spoke not just of our geographic communities but other organizations and creative people, who "may not be aware of the processes we're working with but whom we'd like to encourage to engage".

All these comments about criticality being linked to community connects to Etienne Wenger's notion of *Communities of Practice* as groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly[4, 5] .

Critical practice is intimately linked to community, but even though many creative technology communities can be thought of as Communities of Practice, they are not always critical. As Mark Downie commented, the community

which has grown up around the Processing development environment includes very little evaluative comment, only unfocused enthusiasm for the fact that the community is growing and there is more (code, libraries, discussion) today than there was last week.

Programmers in the Craft Community

Some of the oldest communities of practice are the Crafts Guilds, set up to share bodies of knowledge, debate about merits of work, and act as early forms of peer-review. Most of the programmers we spoke to would not refer to themselves as members of a guild, but they are comfortable in describing their work as "craft". Many were intrigued by the connection we drew to the work of the Crafts Council, and happy with the juxtaposition of contemporary technology with traditional, even pre-industrial, craft skills. As Nick Rothwell told us, software is always re-appropriating older words for its own purposes, and this use of language is both essentially creative and an essential part of software construction which constantly involves assigning existing names to new abstractions. Other metaphors might be equally generative, as when Simon Biggs refers to programming as a "poetics".

Skilled engineers and craftspeople are both reliant on tools and, often, able to invent, customize or fashion their own. Reflection on process results in construction of new tools, and skilled tool use requires a reflective response to the tool itself. This is a natural component of skilled software practice that was recognized by many of those we interviewed.

They were very conscious of, and critical about, their tools, and regularly engaged in making new tools. They commented on other tool-makers, in part because of the way in which communities grow around particular tools, but also in making their own judgments regarding the quality of others' work.

However, it is necessary to draw a distinction between personal tools and "commodity" tools. Those we interviewed were dismissive of members of their community who they feel are overly reliant on mundane or prescriptive tools, and also somewhat dismissive of the exaggerated respect given to those who have developed tools used by large numbers of less skilled artists. As Rosy Greenlees said of craft practitioners in general "the tool is always just a means of creating an end product". However, she admitted that Master craftsmen wouldn't pass on their tools to others, because the tool leaves a personal imprint of itself in the final product. If they give away the tool, they give away some of their distinctiveness.

Certainly, for the software craftsperson or artist-engineer, the external appearance of a work, especially in a static archive, does not adequately reflect the quality of skill that it incorporates. S/he is concerned that critical discourse around their work therefore fails to recognize the true achievements – the craft and technical skills of the maker, which Chris Rose describes as contributing to the "internal aesthetic" of a work.

With regard to their own standards as reflective practitioners, they have a private commitment to take risks, to "mutter to themselves", and undertake exploratory experiments and investigations with new tools. However, this is not like scientific research, and it is not purely driven by curiosity. The craftsperson has a commitment to a client, and to the pragmatics of a commissioning situation. It is not ethical to take risks with a client's money, and deadlines must be honored. In experimental artforms, or those lacking appropriate critical apparati, there is a great deal of reliance on well-informed, often, publicly funded, commissioning bodies to provide opportunities for innovation.

Collaborative Conclusions

In speaking about the Music Technology Community, Joseph Hyde stated, "there is a real malaise in music – of not having any kind of critical practice". He feels the attitude of "oh, we'll do it because it's cool" is very easy to fall into with music because it can be such an abstract form. "If you've got really pure music with no programmatic or narrative, it's easy to argue, 'well, it's just music, dummy'. I'd probably be exactly like that if I hadn't worked outside of music and realized how much other people question, frame, and critique their work".

Almost all the people interviewed in this project spoke of the need to be able to speak critically about their work when working with collaborators – particularly when collaborating with people from different disciplines. Working in collaboration with others, according to our interviewees, forces us to reposition our thinking and leads to new insights.

If we return to Agre and his conclusion that "a critical technical practice will, at least for the foreseeable future, require a split identity – one foot planted in the craft work of design and the other foot planted in the reflexive work of critique". We believe, we've made some progress since 1997. Cross-fertilization between disciplines is helping to heal these split identities. Those technologists exposed to the forms of critical and contextual thinking so prevalent in Art and Design find it difficult to continue working without asking why as well as how.

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